

Work Order ID 108710

October-29-13 9:51:47 AM

108710

Page 1

Item ID: D2012-107

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Clevis

Stop ***NS2***

Start Date: 10/25/13 Start Qty: 10.00

10

Cust Item ID:

Required Date: 10/29/13 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: MJDDate: 13-11-01

QC: _____

Date: _____ SPC (Y/N): _____

Tooling: _____ Date: _____

Run Start

NR1

Stop

NR2

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|--|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr | Revision Nbr | | | | | | | | |
| D2012-107 | Rev C | | | | | | | | |
| 100 | | 0.00 | | | | | | | |
| *100* Waterjet | FLOW WATER JET | | | | | | | | |
| FLOW CNC Waterjet | Memo | 0.00 | | | | | | | |
| | 1-Cut as per Dwg D2012-107 | | | | | | | | |
| | Dwg Rev: <u>C</u> | | | | | | | | |
| | Prog Rev: <u>C</u> | | | | | | | | |
| | 2-Deburr if necessary | | | | | | | | |
| 110 | QC2- Inspect parts off machine FAI/FAIB | 0.00 | | | | | | | |
| *110* QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 120 | QC8- Inspect parts - second check | 0.00 | DAS 27 9-89 | | | | | | |
| *120* QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | B1111S | | | | | | |

DQA: _____ Date: _____

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

| Work Order: _____ | | | DISPOSITION | | | AGAINST DEPARTMENT/PROCESS | | | | | | | | | | | | | | |
|------------------------------|--------------------------|----------------|---|---|---------------------------------------|---------------------------------------|---------------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|---|--------------------------------------|---|-------------------------------------|-----------------------------------|
| | | | Rework <input type="checkbox"/> | Scrap <input type="checkbox"/> | Use-as-is <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Machining <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Finishing <input type="checkbox"/> | Composite <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Supplier <input type="checkbox"/> | Engineering <input type="checkbox"/> | Quality <input type="checkbox"/> | Other <input type="checkbox"/> |
| Part No. _____ | | | Work Order Update <input type="checkbox"/> | | | | | | | | | | | | | | | | | |
| NCR No. _____ | | | | | | | | | | | | | | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | | Initial Chief Eng | Action Description | | | Sign & Date | Verification | | QC Inspector | | | | | | | |
| Doc/Data | | | | | | | | | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | | | | | | | | |
| Material | | | | | | | | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | | | | | | | | | |
| Landing Gear | | | | General | | | | | | | | | | | | | | | | |
| Bending | <input type="checkbox"/> | Bend | <input type="checkbox"/> | Grain | <input type="checkbox"/> | Ovalized | <input type="checkbox"/> | Pressure/Forced | | | | | | | | | | | | |
| Centre Not Concentric to O/S | <input type="checkbox"/> | BOM/Route | <input type="checkbox"/> | Hardware | <input type="checkbox"/> | Over/Under tolerance | <input type="checkbox"/> | Temperature/Cure | | | | | | | | | | | | |
| Cracks | <input type="checkbox"/> | Broken/Damaged | <input type="checkbox"/> | Inspection Incomplete | <input type="checkbox"/> | Part Incorrect | <input type="checkbox"/> | Weld | | | | | | | | | | | | |
| Crushed/Crimped | <input type="checkbox"/> | Burrs | <input type="checkbox"/> | Instructions Incomplete/Unclear | <input type="checkbox"/> | Part Lost/Missing | <input type="checkbox"/> | Wrong Stock Pulled | | | | | | | | | | | | |
| Cuffs | <input type="checkbox"/> | Contamination | <input type="checkbox"/> | Maintenance | <input type="checkbox"/> | Part Moved | <input type="checkbox"/> | | | | | | | | | | | | | |
| Heat Treat | <input type="checkbox"/> | Countersink | <input type="checkbox"/> | Mislabeled | <input type="checkbox"/> | Positioned Wrong | <input type="checkbox"/> | | | | | | | | | | | | | |
| Inspection Strip in Tube | <input type="checkbox"/> | Cut Too Short | <input type="checkbox"/> | Misread | <input type="checkbox"/> | Power Loss/Surge | <input type="checkbox"/> | | | | | | | | | | | | | |
| Ripples in Bend | <input type="checkbox"/> | Drill Holes | <input type="checkbox"/> | Offset | <input type="checkbox"/> | Other | <input type="checkbox"/> | | | | | | | | | | | | | |
| Torque Waves in Extrusion | <input type="checkbox"/> | Drawing | <input type="checkbox"/> | Out of Calibration | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | |
| Turning Sequence | <input type="checkbox"/> | Finish | <input type="checkbox"/> | Out of Sequence | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | |
| Wave/Twist in Tube | <input type="checkbox"/> | Folio | <input type="checkbox"/> | Outside Dimensions | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | |

Work Order ID 108710***108710***

Page 2

October-29-13 9:51:47 AM

Item ID: D2012-107

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Clevis

Stop

NS2

Start Date: 10/25/13 Start Qty: 10.00

10

Cust Item ID:

Required Date: 10/29/13 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

130

Brake NC

NC BRAKE

0.00

16

FF
13-11-20

Brake NC

Memo

0.00

140

140

QC

QC5- Inspect part completeness to step on W/O

0.00

DAS
27
9-89
13|11|21

16

Quality Control

Memo

0.00

150

150

Packaging

Packaging

Identify as per dwg & Stock Location: WFO04.

0.00

DAS
26
9-89

16x

DAS
26
9-89

13-11-21.

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

| Work Order: _____ | | | DISPOSITION | | AGAINST DEPARTMENT/PROCESS | | | | | |
|-------------------|--|--|---|---|--|---|---|--------------|--------------|--|
| | | | Rework <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | |
| | | | Scrap <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | |
| | | | Use-as-is <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | |
| | | | Work Order Update <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | |
| Doc/Data | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | |
| Operator | | | | | | | | | | |
| Material | | | | | | | | | | |
| Setup | | | | | | | | | | |
| Other | | | | | | | | | | |
| Process | | | | | | | | | | |
| Supplier | | | | | | | | | | |
| Training | | | | | | | | | | |
| Unapproved | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | |
| Landing Gear | General | | | | | | | | | |
| | Bending <input type="checkbox"/> | Bend <input type="checkbox"/> | Grain <input type="checkbox"/> | Ovalized <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/> | | | | | |
| | Centre Not Concentric to O/S <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Hardware <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/> | | | | | |
| | Cracks <input type="checkbox"/> | Broken/Damaged <input type="checkbox"/> | Inspection Incomplete <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Weld <input type="checkbox"/> | | | | | |
| | Crushed/Crimped <input type="checkbox"/> | Burrs <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | | | | | |
| | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Maintenance <input type="checkbox"/> | Part Moved <input type="checkbox"/> | | | | | | |
| | Heat Treat <input type="checkbox"/> | Countersink <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/> | | | | | | |
| | Inspection Strip in Tube <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Misread <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | |
| | Ripples in Bend <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Offset <input type="checkbox"/> | | | | | | | |
| | Torque Waves in Extrusion <input type="checkbox"/> | Drawing <input type="checkbox"/> | Out of Calibration <input type="checkbox"/> | | | | | | | |
| | Turning Sequence <input type="checkbox"/> | Finish <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | | | | | | | |
| | Wave/Twist in Tube <input type="checkbox"/> | Folio <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | | | | | | | |

Work Order ID 108710

108710

Page 3

October-29-13 9:51:47 AM

Item ID: D2012-107

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: Clevis

Start Date: 10/25/13 Start Qty: 10.00

10

Cust Item ID:

Required Date: 10/29/13 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan:

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID
160
160

Operation
Description
QC21- Final Inspection - Work Order Release

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

QC
Quality Control

13/11/22 JJ

13/11/22 J

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

| Work Order: _____ | | | DISPOSITION | | | AGAINST DEPARTMENT/PROCESS | | | | | | | | |
|---|--|------|---------------------------------------|---|---|---|---|---|--------------|--------------|--|--|---|--|
| | | | Rework <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | |
| Part No. _____ | | | Scrap <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | |
| NCR No. _____ | | | Use-as-is <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | |
| Root Cause | | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | | |
| Doc/Data <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Operator <input type="checkbox"/> Material <input type="checkbox"/> Setup <input type="checkbox"/> Other <input type="checkbox"/> Process <input type="checkbox"/> Supplier <input type="checkbox"/> Training <input type="checkbox"/> Unapproved <input type="checkbox"/> | | | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge | | <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Picklist Print

October-29-13 9:51:46 AM

Page 1

Work Order ID: 108710

Parent Item: D2012-107

Parent Item Name: Clevis

Start Date: 10/25/13

Required Date: 10/29/13

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP: D 01.11.08 Re-format, Drawing to Rev. CSM
IPP Rev:E Now on Waterjet 06-06-13 JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|------------------|---------------|----------------|--------|
| M304S16GA 304/316 Sheet .063 | | Purchased | No | | | 110 | sf | 399.0840 | 0.016 | 0.168421 0.25 | | Jm.3-11-15 | |

| Location | Loc Qty | Loc Code |
|----------|-------------|----------|
| MAT020 | 399.0839998 | |
| 123136 | 140.2 | |
| M126159 | 31.5 | |
| M126915 | 227.384 | |
| | | 126915 |

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

| Work Order: _____ | | | DISPOSITION | | | AGAINST DEPARTMENT/PROCESS | | | | | | | |
|---|------|------|---|--|---------------------------------------|---|---|--------------|--------------|---|--|--|--|
| | | | Rework <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | |
| | | | Scrap <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | |
| | | | Use-as-is <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | |
| | | | Work Order Update <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | | |
| Doc/Data | | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | |
| Material | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | | | |

| | | |
|------------------------------|--------------|-------------|
| DART AEROSPACE LTD | Work Order: | 108710 |
| Description: Clevis | Part Number: | D2012-107 |
| Inspection Dwg: D2012 Rev: C | | Page 1 of 1 |

FIRST ARTICLE INSPECTION CHECKLIST

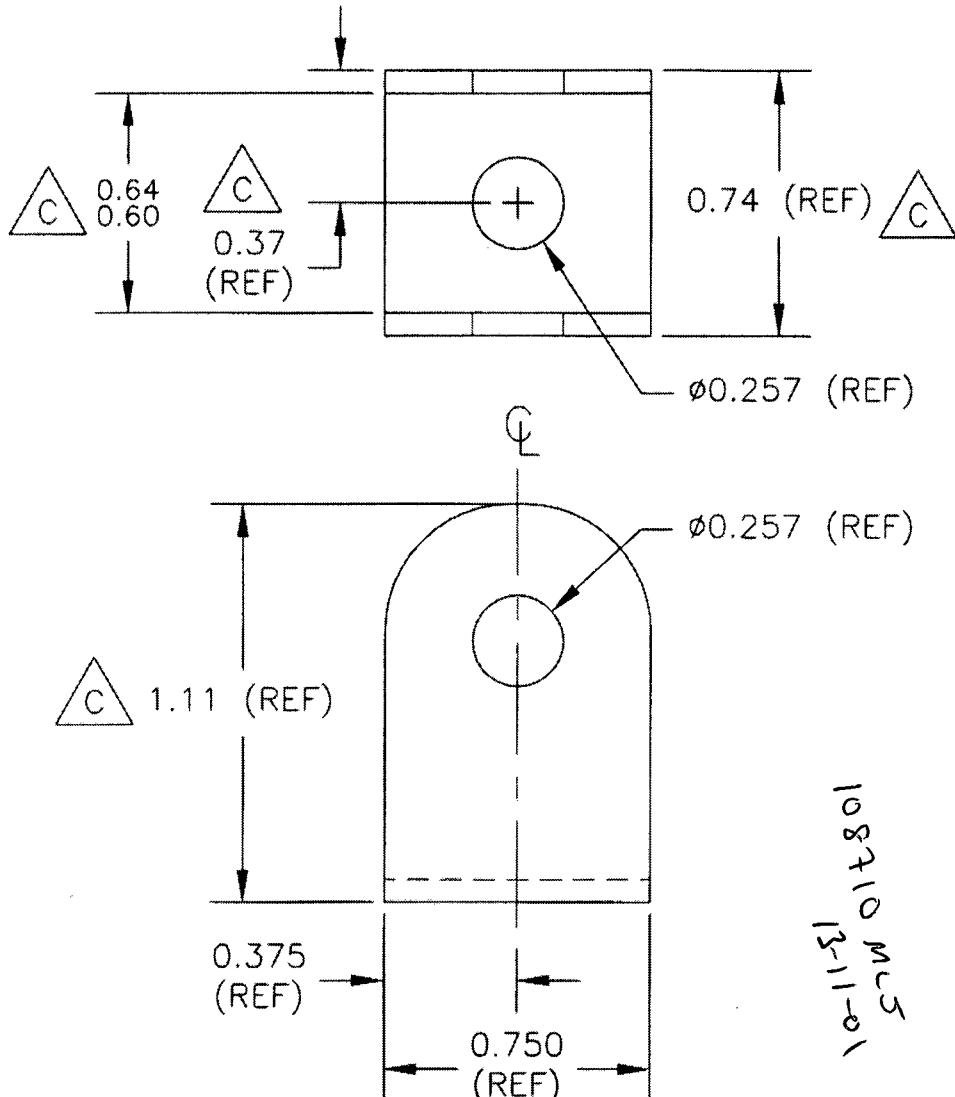
X First Article Prototype

| DAS | |
|--------------|----------|
| Measured by: | JM |
| Date: | 13-11-15 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| A | 07.02.02 | New Issue | KJ/JLM | JL |

DART

| | | | |
|-------------------------------|--------------------------------|---|------------------------|
| DESIGN BW | DRAWN BY <i>RF</i> | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DRAWING NO. D2012-107 | REV. C SHEET 1 OF 2 |
| DATE 99.12.20 | | TITLE CLEVIS | SCALE 2:1 |

RELEASED
CD.01.04 DS

MATERIAL: AISI 304/316 SS 0.063 THICK

USE 0.032 BEND RADIUS

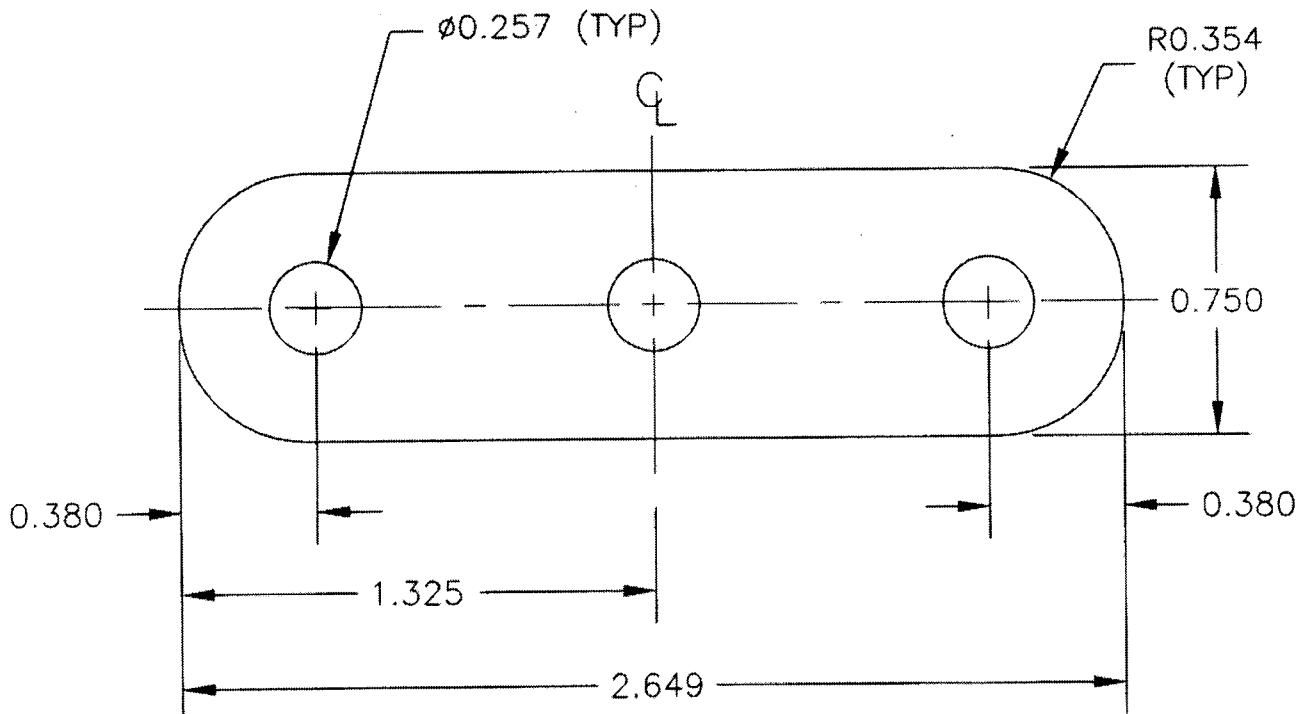
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES



ORIGINAL
ISSUED

| | | | |
|------------------------------|-------------------------------|---|------------------------|
| DESIGN BW | DRAWN BY RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED <i>[initials]</i> | APPROVED <i>[initials]</i> | DRAWING NO. D2012-107 | REV. C SHEET 2 OF 2 |
| DATE 99.12.20 | | TITLE CLEVIS | SCALE 2:1 |

RELEASED
00.01.04 DS



D2012-107 FLAT PATTERN

MATERIAL: AISI 304/316 SS 0.063 THICK
TOLERANCES ARE DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES

